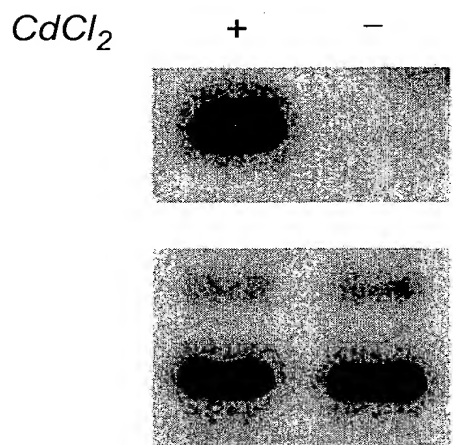
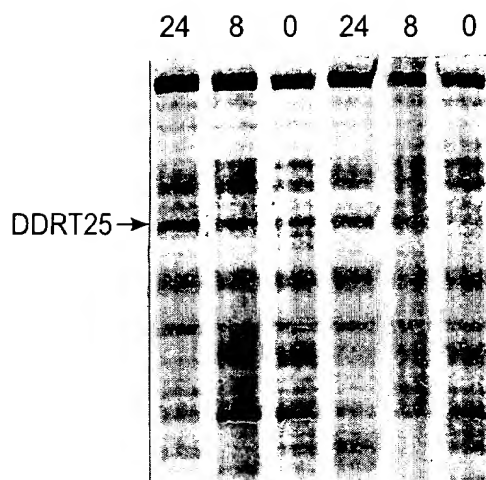




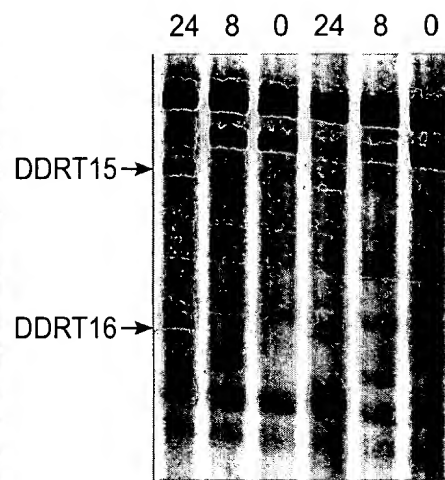
Inventor: FREEDMAN et al  
SN 09/437,450/Sheet 1 of 43  
Atty. Dkt.: 1579-315



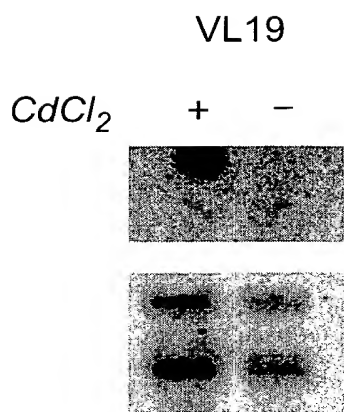
*Fig. 1*



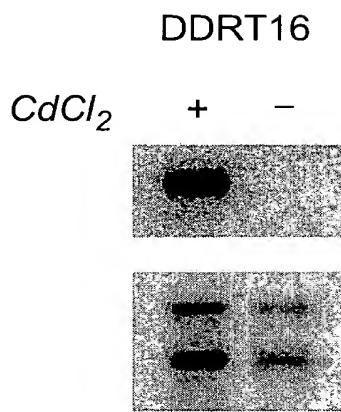
*Fig. 2A*



*Fig. 2B*

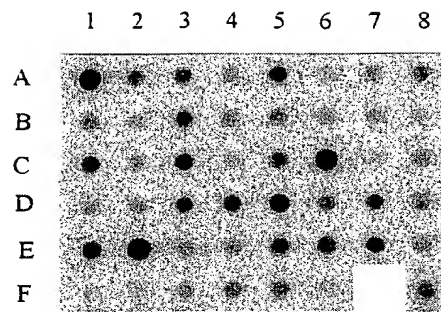


*Fig. 3A*

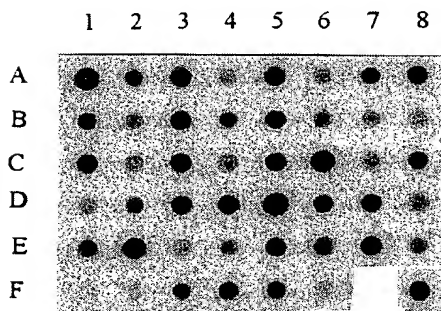


*Fig. 3B*

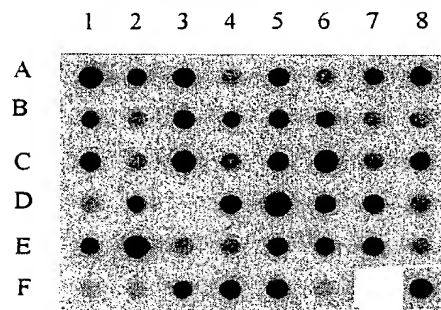
*Fig. 4A*



*Fig. 4B*



*Fig. 4C*



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*Fig. 5A-1*

LOCUS AF072438 284 bp mRNA EST 06-JUL-1998  
DEFINITION AF072438 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT21, mRNA sequence.  
ACCESSION AF072438  
NID g3288944  
KEYWORDS EST.  
SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.  
REFERENCE 1 (bases 1 to 284)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished (1998)  
COMMENT  
Contact: Jonathan H. Freedman  
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Email: jonf@duke.edu.  
FEATURES Location/Qualifiers  
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121 cggaaggatg gcctctactg tagtaatcga caattggact cttatccacc ggatcactta  
181 acctattttg atattaatat gcctgattgg ggatcacagg gtttgcgga aaatgtaatt  
241 atgaactgaa ttcgaaatgt attataaat tagttttat tggg

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LOCUS AF072437 214 bp mRNA EST 06-JUL-1998  
DEFINITION AF072437 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone VL8, mRNA sequence.  
ACCESSION AF072437  
NID g3288943  
KEYWORDS EST.  
SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.  
REFERENCE 1 (bases 1 to 214)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by

Fig. 5A-2

differential display  
JOURNAL Unpublished (1998)  
COMMENT  
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Email: jonf@duke.edu.  
FEATURES Location/Qualifiers  
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/clone="VL8"  
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/dev\_stage="mixed population"  
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61 aggaggccag tgagaaaaaa tgctgtccag ctggatgtaa gggagactgc aagtgtgcaa  
121 actgtcattg tgcagagcag aagcagtgcg agacaagacc catcaacacc agggaactgc  
181 tgcggctcat taaaatgttt cagagttgaa tcta  
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LOCUS AF072436 217 bp mRNA EST 06-JUL-1998  
DEFINITION AF072436 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone VL7, mRNA sequence.  
ACCESSION AF072436  
NID g3288942  
KEYWORDS EST.  
SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.  
REFERENCE 1 (bases 1 to 217)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished (1998)  
COMMENT  
Contact: Jonathan H. Freedman  
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Email: jonf@duke.edu.  
FEATURES Location/Qualifiers  
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*Fig. 5A-3*

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      /dev_stage="mixed population"
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      61 gtgaggaggc cagtgaataa aaatgctgtc cagctggatg taaggagagac tgcaagtgtg
      121 caaactgtca ttgtgcagag cagaagcagt gcgagacaag acctatcaac accagggaac
      181 tgctgcggct cattaaaatg ttccagagtt gaatcta
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LOCUS   AF072435   217 bp   mRNA           EST    06-JUL-1998
DEFINITION AF072435 mRNA from cadmium-responsive gene Caenorhabditis elegans
          cDNA clone VL15, mRNA sequence.
ACCESSION AF072435
NID      g3288941
KEYWORDS EST.
SOURCE   Caenorhabditis elegans.
ORGANISM Caenorhabditis elegans
          Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
          Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
REFERENCE 1 (bases 1 to 217)
AUTHORS  Freedman, J.H. and Liao, H.-C.
TITLE    Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.
          Identification and cloning of new cadmium-responsive genes by
          differential display
JOURNAL  Unpublished (1998)
COMMENT
          Contact: Jonathan H. Freedman
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          Duke University
          Box 90328, Durham, NC 27708-0328, USA
          Email: jonf@duke.edu.
FEATURES             Location/Qualifiers
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                       /tissue_type="whole animal"
                       /dev_stage="mixed population"
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ORIGIN
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      61 gtgaggaggc cagtgaataa aaatgctgtc cagctggatg taaggagagac tgcaagtgtg
      121 caaactgtca ttgtgcagag cagaagcagt gcgagacaag acctatcaac accagggaac
      181 tgctgcggct cattaaaatg ttccagagtt gaatcta
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LOCUS   AF072434   216 bp   mRNA           EST    06-JUL-1998
DEFINITION AF072434 mRNA from cadmium-responsive gene Caenorhabditis elegans
          cDNA clone VL12, mRNA sequence.
ACCESSION AF072434
NID      g3288940
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*Fig. 5A-4*

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 216)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

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FEATURES Location/Qualifiers

source 1..216  
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/clone="VL12"  
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/tissue\_type="whole animal"  
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BASE COUNT 69 a 37 c 66 g 44 t

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121 aaactgtcat tgtgcagagc agaagcagtg cgagacaaga cccatcaaca ccagggaact  
181 gctgcggctc attaaaatgt ttcagagttg aatcta  
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LOCUS AF071399 240 bp mRNA EST 01-JUL-1998

DEFINITION AF071399 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT9A, mRNA sequence.

ACCESSION AF071399

NID g3265144

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 240)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

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*Fig. 5A-5*

FEATURES Location/Qualifiers

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/db\_xref="taxon:6239"  
/clone="DDRT9A"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"

BASE COUNT 81 a 28 c 41 g 90 t

ORIGIN

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61 ggaagcctag aagagtgaat attttaaaa atgtgaggaa ctggtttgt attcagaagc  
121 atataacgt tgccttaatt tatatatgac gttctctatg aatatagcca aatgatcga  
181 tattttta ccaaaaatca aacattttg gtatacgac ctcgcctca cggagggtta  
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LOCUS AF071398 217 bp mRNA EST 01-JUL-1998

DEFINITION AF071398 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT7, mRNA sequence.

ACCESSION AF071398

NID g3265143

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 217)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

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FEATURES Location/Qualifiers

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/clone="DDRT7"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"

BASE COUNT 64 a 38 c 42 g 73 t

ORIGIN

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61 aactgtctat atcattccgc aatcacatt cggatgtct cgaaaaggca ttccaaagt

Fig. 5A-6

121 attggagtca tgtgaaagag ttcgtcatga agttaccaca aaggcatttc atagtgaatt  
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LOCUS AF071397 219 bp mRNA EST 01-JUL-1998  
DEFINITION AF071397 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT6, mRNA sequence.  
ACCESSION AF071397  
NID g3265142  
KEYWORDS EST.  
SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.  
REFERENCE 1 (bases 1 to 219)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished (1998)  
COMMENT  
Contact: Jonathan H. Freedman  
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Email: jonf@duke.edu.

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BASE COUNT 75 a 38 c 34 g 72 t

ORIGIN

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121 aagtatataa ttctccaac aagctactgc atgtccttgc actacaatct tctccgacgg  
181 attccactct cgatcgcgga ttcggattct tcatgttg

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LOCUS AF071396 254 bp mRNA EST 01-JUL-1998  
DEFINITION AF071396 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT5, mRNA sequence.  
ACCESSION AF071396  
NID g3265141  
KEYWORDS EST.  
SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.  
REFERENCE 1 (bases 1 to 254)

*Fig. 5A-7*

AUTHORS Freedman,J.H. and Liao,H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished (1998)  
COMMENT  
Contact: Jonathan H. Freedman  
Nicholas School of the Environment  
Duke University  
Box 90328, Durham, NC 27708-0328, USA  
Email: jonf@duke.edu.  
FEATURES Location/Qualifiers  
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121 ttcgaaaa atgtccataa aaagtgtga atgactttg ttcattcga agcatacata  
181 cgatcgaaac ggagaaatcg atagatcgaa tcaggataag tggggatact gtattgtcgg  
241 atgaaaacat agac  
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LOCUS AF071394 165 bp mRNA EST 01-JUL-1998  
DEFINITION AF071394 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT47, mRNA sequence.  
ACCESSION AF071394  
NID g3265139  
KEYWORDS EST.  
SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.  
REFERENCE 1 (bases 1 to 165)  
AUTHORS Freedman,J.H. and Liao,H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished (1998)  
COMMENT  
Contact: Jonathan H. Freedman  
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Box 90328, Durham, NC 27708-0328, USA  
Email: jonf@duke.edu.  
FEATURES Location/Qualifiers  
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*Fig. 5A-8*

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/dev_stage="mixed population"
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    121 acctgaaaac gagtgttttg aatacttgat acattgtct tcac
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              cDNA clone DDRT41, mRNA sequence.
ACCESSION   AF071393
NID         g3265138
KEYWORDS     EST.
SOURCE      Caenorhabditis elegans.
ORGANISM     Caenorhabditis elegans
              Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
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REFERENCE   1 (bases 1 to 154)
AUTHORS     Freedman,J.H. and Liao,H.-C.
TITLE       Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.
              Identification and cloning of new cadmium-responsive genes by
              differential display
JOURNAL      Unpublished (1998)
COMMENT
    Contact: Jonathan H. Freedman
              Nicholas School of the Environment
              Duke University
              Box 90328, Durham, NC 27708-0328, USA
              Email: jonf@duke.edu.
FEATURES     Location/Qualifiers
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    121 ggagatcaaa aacatgttta cagctttggt ccta
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LOCUS   AF071392   264 bp   mRNA           EST       01-JUL-1998
DEFINITION   AF071392 mRNA from cadmium-responsive gene Caenorhabditis elegans
              cDNA clone DDRT40, mRNA sequence.
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*Fig. 5A-9*

ACCESSION AF071392

NID g3265137

KEYWORDS EST.

SOURCE Caenorhabditis elegans.

ORGANISM Caenorhabditis elegans

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.

REFERENCE 1 (bases 1 to 264)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

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/tissue\_type="whole animal"  
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BASE COUNT 90 a 47 c 59 g 68 t

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121 gagagtcctg gtctctcaat taaattctac gaggcgatca aagaatacga gaaaatggag  
181 acaccagatg agcgattaac aaaagcacga gaaatttacc gatcatcata tacggttgaa  
241 ttccgtcgcg caatcgctac actc

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LOCUS AF071391 187 bp mRNA EST 01-JUL-1998

DEFINITION AF071391 mRNA from cadmium-responsive gene Caenorhabditis elegans  
cDNA clone DDRT4, mRNA sequence.

ACCESSION AF071391

NID g3265136

KEYWORDS EST.

SOURCE Caenorhabditis elegans.

ORGANISM Caenorhabditis elegans

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.

REFERENCE 1 (bases 1 to 187)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

COMMENT

*Fig. 5A-10*

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Email: jonf@duke.edu.

FEATURES                      Location/Qualifiers

source                      1..187  
                              /organism="Caenorhabditis elegans"  
                              /strain="N2"  
                              /db\_xref="taxon:6239"  
                              /clone="DDRT4"  
                              /clone\_lib="mRNA from cadmium-responsive gene"  
                              /tissue\_type="whole animal"  
                              /dev\_stage="mixed population"

BASE COUNT        57 a    22 c    41 g    67 t

ORIGIN

1 aaatttttat taaaataaaa taaacatggt tttgttgata ttagcggt aaagctgaaa  
61 tgacaatgat tagaaaacca gcagagaata gagatgatgt tccttcggt gtgtttcca  
121 gtgaacactt gttgcggtgg agcccgatt tagcgagtgg tagttttga tgtgattggt  
181 tccaatc

//

LOCUS    AF071389    267 bp    mRNA                      EST    01-JUL-1998

DEFINITION    AF071389 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
                              cDNA clone DDRT37, mRNA sequence.

ACCESSION    AF071389

NID            g3265134

KEYWORDS    EST.

SOURCE        *Caenorhabditis elegans*.

ORGANISM    *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE    1 (bases 1 to 267)

AUTHORS    Freedman, J.H. and Liao, H.-C.

TITLE        Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
                              Identification and cloning of new cadmium-responsive genes by  
                              differential display

JOURNAL    Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES                      Location/Qualifiers

source                      1..267  
                              /organism="Caenorhabditis elegans"  
                              /strain="N2"  
                              /db\_xref="taxon:6239"  
                              /clone="DDRT37"  
                              /clone\_lib="mRNA from cadmium-responsive gene"  
                              /tissue\_type="whole animal"  
                              /dev\_stage="mixed population"

BASE COUNT        66 a    75 c    54 g    72 t

*Fig. 5A-11*

ORIGIN

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1  tggctactcca cctacaagtt ctacaagttc tacgagggtg tctgatcga tccattccac
61  aaggctatcc gtcgtaacc agacacccaa tggatcacca agcctagttc acaagcaccg
121  tgagcaaaga ggactcacct ctgctggacg caagttcgtg gactcggaaa gggattgctt
181  ttctctgcta cccgcggagg atcccaacac caaagtttt ccaccgccca accgataaat
241  ctgttattt tattttgtt tgggtt
```

//

LOCUS AF071388 292 bp mRNA EST 01-JUL-1998  
DEFINITION AF071388 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT36, mRNA sequence.

ACCESSION AF071388

NID g3265133

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 292)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..292  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/clone="DDRT36"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"

BASE COUNT 73 a 57 c 51 g 111 t

ORIGIN

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1  tttttttt tttcccaac ccctcacat aaaggcggaa aaccgattgt tgctgttact
61  tgtgtgtgc gttattccc tgaggatcc atattccgct tctccaatc tctaaagata
121  tacctgaaaa cgagttgtcg tcgaaatact tgatacatgt tgtcttcac ctggtgtatg
181  ttgttcgca aattctcat actagttag ataggattg aatgagctgg cacgagtcaa
241  cttgaactc gaattcaat atttctgta tctgcatta agtgatgaat aa
```

//

LOCUS AF071387 314 bp mRNA EST 01-JUL-1998  
DEFINITION AF071387 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT35, mRNA sequence.

ACCESSION AF071387

NID g3265132

KEYWORDS EST.

*Fig. 5A-12*

SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.  
REFERENCE 1 (bases 1 to 314)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished (1998)  
COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers  
source 1..314  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/clone="DDRT35"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"

BASE COUNT 86 a 65 c 56 g 107 t

ORIGIN

1 tctgagctag gaggtccagg aggaacaac ggaggaggtg ctggaaatgg tggattcgac  
61 gatttgatg atttggtcgc cgttcgaa gaactgaaa agattaagta atcatcacc  
121 gacgttccat tcattataa ctattgtt ctctccacc caattttt ttcacgtgc  
181 tttttgtg tcataaatga gaccccaaa aactagctgt ttcttagtgc atacgttaa  
241 accccttag tcattgata cctcattatc cgaaaaacct ttcgacattc  
301 atcaactagg ttt

//

LOCUS AF071386 189 bp mRNA EST 01-JUL-1998  
DEFINITION AF071386 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT34, mRNA sequence.

ACCESSION AF071386

NID g3265131

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 189)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

COMMENT  
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Nicholas School of the Environment

Fig. 5A-13

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FEATURES                      Location/Qualifiers  
    source                      1..189  
                                /organism="Caenorhabditis elegans"  
                                /strain="N2"  
                                /db\_xref="taxon:6239"  
                                /clone="DDRT34"  
                                /clone\_lib="mRNA from cadmium-responsive gene"  
                                /tissue\_type="whole animal"  
                                /dev\_stage="mixed population"

BASE COUNT    61 a   26 c   48 g   54 t

ORIGIN  
    1 tctgagctag ggaccgaaat tcacaaatat ccaattgtta ctggatgggtg gggatgtgga  
    61 cgatttaatg gggacaagcc actgaagtgt atgttatttc attcgtaaa tatgaagatg  
    121 gaggagagtg aatggggatt ttgcttcttt tgcaaaatgg cctccctatg tacctgaaaa  
    181 aaaaaaaaaa  
//

LOCUS    AF071385    171 bp   mRNA            EST    01-JUL-1998  
DEFINITION   AF071385 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
                                cDNA clone DDRT33D, mRNA sequence.  
ACCESSION    AF071385  
NID            g3265130  
KEYWORDS    EST.  
SOURCE       *Caenorhabditis elegans*.  
ORGANISM     *Caenorhabditis elegans*  
                                Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
                                Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.  
REFERENCE    1 (bases 1 to 171)  
AUTHORS     Freedman, J.H. and Liao, H.-C.  
TITLE        Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
                                Identification and cloning of new cadmium-responsive genes by  
                                differential display  
JOURNAL      Unpublished (1998)  
COMMENT  
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                                Duke University  
                                Box 90328, Durham, NC 27708-0328, USA  
                                Email: jonf@duke.edu.

FEATURES                      Location/Qualifiers  
    source                      1..171  
                                /organism="Caenorhabditis elegans"  
                                /strain="N2"  
                                /db\_xref="taxon:6239"  
                                /clone="DDRT33D"  
                                /clone\_lib="mRNA from cadmium-responsive gene"  
                                /tissue\_type="whole animal"  
                                /dev\_stage="mixed population"

BASE COUNT    57 a   44 c   37 g   33 t

ORIGIN  
    1 tctgagctag gaaaggacgg agaagatgga gagaacggag ctgctggagc cgctggacca

*Fig. 5A-14*

61 aagggatctt gcgaccactg cccaccacca cgactcccc aggatattaa ttcactctc  
121 tctaatttta gtgaatctca ttctaataaa aagccgcccc aaaaaaaaaa a

//

LOCUS AF071383 289 bp mRNA EST 01-JUL-1998  
DEFINITION AF071383 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT30, mRNA sequence.  
ACCESSION AF071383  
NID g3265128  
KEYWORDS EST.  
SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.  
REFERENCE 1 (bases 1 to 289)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished (1998)  
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FEATURES Location/Qualifiers  
source 1..289  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/clone="DDRT30"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"

BASE COUNT 68 a 64 c 63 g 94 t  
ORIGIN

1 tttttttt ttgagcgag cgttattat ttgagtcgag cttgggtga gtcgtcagct  
61 gaacatgaag attgacaaag aagacgatca gcagcaacag atgcgcagag tcgcattctt  
121 tgcgggtgct gtctcaactg cagccgtcat ttcaagcatc gtgactctcc caatgatcta  
181 ctcttactct tcaatcttcc caatccatt tgatcattgg aaaccgagtt ctgtaaaact  
241 gtgctcgtga tatgtggtgt cgaagttctc cacaagtcag gtgtaccct

//

LOCUS AF071382 162 bp mRNA EST 01-JUL-1998  
DEFINITION AF071382 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT3, mRNA sequence.  
ACCESSION AF071382  
NID g3265127  
KEYWORDS EST.  
SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

Fig. 5A-15

REFERENCE 1 (bases 1 to 162)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..162  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/clone="DDRT3"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"

BASE COUNT 64 a 31 c 18 g 49 t

ORIGIN

1 ctccaccgca acaagtgttc acgtggaaac aacaacgaaa ggaacatcat ctctatctct  
61 gctggtttc taatcattgt catttcagct ttaacgctat aatcaacaaa aacagtttat  
121 ttatttttaa taaaaattta ttcgtgc aaa aaaaaaaaa aa

//

LOCUS AF071381 140 bp mRNA EST 01-JUL-1998

DEFINITION AF071381 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT29, mRNA sequence.

ACCESSION AF071381

NID g3265126

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 140)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..140  
/organism="Caenorhabditis elegans"  
/strain="N2"

*Fig. 5A-16*

```

/db_xref="taxon:6239"
/clone="DDRT29"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"
BASE COUNT   52 a   25 c   29 g   34 t
ORIGIN
    1 tagggcctgg ttgtgacaat gtgcactaaa atggggcatg aatcacca gcagagttca
    61 cttacccaaa gtgtacttat taagagtcaa ctgtgaagta tatgagacat ttcagttgcc
    121 tgcccaaaaa aaaaaaaaaa
//

LOCUS   AF071380   308 bp   mRNA           EST    01-JUL-1998
DEFINITION  AF071380 mRNA from cadmium-responsive gene Caenorhabditis elegans
            cDNA clone DDRT28, mRNA sequence.
ACCESSION  AF071380
NID       g3265125
KEYWORDS   EST.
SOURCE     Caenorhabditis elegans.
ORGANISM   Caenorhabditis elegans
            Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
            Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
REFERENCE  1 (bases 1 to 308)
AUTHORS    Freedman,J.H. and Liao,H.-C.
TITLE      Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.
            Identification and cloning of new cadmium-responsive genes by
            differential display
JOURNAL     Unpublished (1998)
COMMENT
    Contact: Jonathan H. Freedman
    Nicholas School of the Environment
    Duke University
    Box 90328, Durham, NC 27708-0328, USA
    Email: jonf@duke.edu.
FEATURES             Location/Qualifiers
     source            1..308
                        /organism="Caenorhabditis elegans"
                        /strain="N2"
                        /db_xref="taxon:6239"
                        /clone="DDRT28"
                        /clone_lib="mRNA from cadmium-responsive gene"
                        /tissue_type="whole animal"
                        /dev_stage="mixed population"
BASE COUNT   88 a   70 c   73 g   77 t
ORIGIN
    1 tagttaggca caggatgtac gaggaaattc tactattttc gggctcacc acgaaatcac
    61 aataacccgg atttttagt ggtcccgca cggtgaccta ctggcgcgtc aggcactccg
    121 ccgcgacatt cgccgacacg cctacaatcc acgtgtcaat cgtcagattt gcggatcaat
    181 aatggtagtg aaaggtggaa atacgtatat ggatcatgtt caaaggcatc aagctgaaca
    241 attcgaagag ttgaatcggc gtcgacactt ttgatccaag accgtaagaa attgaaagc
    301 tattggtg
//

LOCUS   AF071379   238 bp   mRNA           EST    01-JUL-1998

```

Fig. 5A-17

DEFINITION AF071379 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT26, mRNA sequence.

ACCESSION AF071379

NID g3265124

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;

Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 238)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..238

/organism="Caenorhabditis elegans"

/strain="N2"

/db\_xref="taxon:6239"

/clone="DDRT26"

/clone\_lib="mRNA from cadmium-responsive gene"

/tissue\_type="whole animal"

/dev\_stage="mixed population"

BASE COUNT 74 a 43 c 44 g 77 t

ORIGIN

1 tttttttt tttggggg gaaatcacgg ctcggatgc aacagtcttc tctcaattgg

61 caactgtcta ttatccattc cgcaatcaca ttccggatgt tctcgaaaag gacttccaa

121 agttattgga gtactgtgaa agagttcgtc atgaagtta ccaaaggac ttactatgt

181 gaattaaatt gtcaactag tagtcagatc aataaaatt tccgcgcgaa aaaaaaaa

//

LOCUS AF071378 324 bp mRNA EST 01-JUL-1998

DEFINITION AF071378 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT25A, mRNA sequence.

ACCESSION AF071378

NID g3265123

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;

Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 324)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

Fig. 5A-18

COMMENT

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FEATURES Location/Qualifiers

source 1..324  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/clone="DDRT25A"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"

BASE COUNT 102 a 70 c 73 g 79 t

ORIGIN

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1 tagttaggca caggatgtac gaggaaatc tactatttc ggtctcacc acgaaatcac
61 aataaccggg atttttagt ggtcccgca cgttgaccta ctggcgcg caggcactcc
121 gccgcgacat tcgccgacac gcctacaatc cacgtgtcaa tcgtcagatt tgcggatcaa
181 taatggtgat gaaagggtgga aatacgtata tggatcatgt tcaaaggcat caagctgaac
241 aatcgaaga gttgaatcgg cgtcgacaac ttttgatcc aagaccgtaa gaaattgaa
301 agctattggt gaaaaaaaaa aaaa
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//

LOCUS AF071377 272 bp mRNA EST 01-JUL-1998  
DEFINITION AF071377 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT24, mRNA sequence.

ACCESSION AF071377

NID g3265122

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 272)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..272  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/clone="DDRT24"  
/clone\_lib="mRNA from cadmium-responsive gene"

Fig. 5A-19

```

        /tissue_type="whole animal"
        /dev_stage="mixed population"
BASE COUNT   91 a   74 c   51 g   56 t
ORIGIN
    1 ttgtactcca cgcagaaaga agaaggtcat ccacaacacc gctactaccg atgacaagaa
    61 gcttcaaagc aatttgaaga aactctctgt caccaacatt ccaggaatcg aggagggtcaa
    121 catgattaag acgatggaac cggtatccac ttaacaacc caaaagtcta aacctctgtt
    181 cccagccaat acctctctg tcacaggatc agccgataac aagtcagatc actgaaatgt
    241 ctcccaggga atgctgaact ggtcagagtc ct
//

LOCUS   AF071395   218 bp   rRNA           INV   30-JUN-1998
DEFINITION   Caenorhabditis elegans strain N2 clone DDRT48, rRNA sequence.
ACCESSION   AF071395
NID        g3265140
KEYWORDS
SOURCE     Caenorhabditis elegans.
ORGANISM   Caenorhabditis elegans
            Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
            Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
REFERENCE  1 (bases 1 to 218)
AUTHORS   Freedman,J.H. and Liao,H.-C.
TITLE     Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.
            Identification and cloning of new cadmium-responsive genes by
            differential display
JOURNAL    Unpublished
REFERENCE  2 (bases 1 to 218)
AUTHORS   Freedman,J.H. and Liao,H.-C.
TITLE     Direct Submission
JOURNAL    Submitted (09-JUN-1998) Nicholas School of the Environment, Duke
            University, Box 90328, Durham, NC 27708-0328, USA
FEATURES   Location/Qualifiers
            source             1..218
                                /organism="Caenorhabditis elegans"
                                /strain="N2"
                                /db_xref="taxon:6239"
                                /tissue_type="whole animal"
                                /dev_stage="mixed population"
                                /note="from cadmium-responsive gene"
                                /clone="DDRT48"
            misc_RNA           1..218
                                /note="similar to Caenorhabditis elegans rDNA tandem
                                repeats"
BASE COUNT   58 a   58 c   38 g   64 t
ORIGIN
    1 tttttttt ttgcagaag cggggactaa aagcaagctt tcatccacc gatgatacaa
    61 ggcgttttta gtaccttagg atcgactgac ccacatccaa ctactgttcc acgtggaacc
    121 ctcttcact tcagtttca aggatcgaac ttgaatatt gctactacca tacgatctgc
    181 actgacggaa agtccagccg agcctacctc atagttaa
//

LOCUS   AF071390   238 bp   rRNA           INV   30-JUN-1998
DEFINITION   Caenorhabditis elegans strain N2 clone DDRT38, rRNA sequence.
ACCESSION   AF071390
```

Fig. 5A-20

NID g3265135

KEYWORDS

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 238)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished

REFERENCE 2 (bases 1 to 238)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Direct Submission

JOURNAL Submitted (09-JUN-1998) Nicholas School of the Environment, Duke  
University, Box 90328, Durham, NC 27708-0328, USA

FEATURES Location/Qualifiers

source 1..238

/organism="Caenorhabditis elegans"

/strain="N2"

/db\_xref="taxon:6239"

/tissue\_type="whole animal"

/dev\_stage="mixed population"

/note="from cadmium-responsive gene"

/clone="DDRT38"

misc\_RNA 1..238

/note="similar to *Caenorhabditis elegans* rDNA tandem  
repeats"

BASE COUNT 58 a 50 c 58 g 72 t

ORIGIN

1 tttttttt tttgccggg cgggtgtgtac aaccggcagg gacgtaatca acgtgagctg  
61 atgactcgcg ctactaggc attcctcgtt taagggaat aattacaata ccctatccg  
121 gacatggaag aattcaacg gttaccgat accttcaac acgggaaaac taccgggtg  
181 gacaccatta ggactgacag attgaaagtc ttgtcgatt tgggtggtgg ttgtgcat

//

LOCUS AF071384 253 bp rRNA INV 30-JUN-1998

DEFINITION *Caenorhabditis elegans* strain N2 clone DDRT32, rRNA sequence.

ACCESSION AF071384

NID g3265129

KEYWORDS

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 253)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished

REFERENCE 2 (bases 1 to 253)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Direct Submission  
JOURNAL Submitted (09-JUN-1998) Nicholas School of the Environment, Duke  
University, Box 90328, Durham, NC 27708-0328, USA  
FEATURES Location/Qualifiers  
source 1..253  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"  
/note="from cadmium-responsive gene"  
/clone="DDRT32"  
misc\_RNA 1..253  
/note="similar to Caenorhabditis elegans rDNA tandem  
repeats"  
BASE COUNT 45 a 60 c 69 g 79 t  
ORIGIN  
1 tagggcctgt tgggtgatgc ttgccggcg cagttctgtc tgcttgatac ttcgggtga  
61 tggcgggacta gtgattgtgc ttctgcgga ccgtttctgg tgtgtgcttg gacctcggtt  
121 ctagtatcct gatcgctcat ctatcaaccg tactgtaacc ggtacgactc agggaatccg  
181 actgtctaata taaaacagag gtgacagatg gtccttcgcg acgtaactg tcactgatt  
241 ctccccagtg cac  
//  
LOCUS AF071376 277 bp rRNA INV 30-JUN-1998  
DEFINITION Caenorhabditis elegans strain N2 clone DDRT23, rRNA sequence.  
ACCESSION AF071376  
NID g3265121  
KEYWORDS .  
SOURCE Caenorhabditis elegans.  
ORGANISM Caenorhabditis elegans  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.  
REFERENCE 1 (bases 1 to 277)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished  
REFERENCE 2 (bases 1 to 277)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Direct Submission  
JOURNAL Submitted (09-JUN-1998) Nicholas School of the Environment, Duke  
University, Box 90328, Durham, NC 27708-0328, USA  
FEATURES Location/Qualifiers  
source 1..277  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"  
/note="from cadmium-responsive gene"  
/clone="DDRT23"  
misc\_RNA 1..277

Fig. 5A-22

/note="similar to *Caenorhabditis elegans* rDNA tandem repeats"

BASE COUNT 67 a 59 c 73 g 78 t

ORIGIN

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1 tttttttt ttggggggg gcggtgtga caaagggcag ggacgtaac aacgtgagct
61 gatgactcac acttctaggc attcctcgtt taagggaata attacaatac ccattcccga
121 catggaagaa ttcaacggg ttaccgatac ctttcggca acacgggaaa actcaccgg
181 tccggacacc attaggactg acagattgaa agctctttct cgatttggtg gttggtggtg
241 catggccgtt ctagttggt ggagtaccaa tcactag
```

//

LOCUS AF071375 216 bp mRNA EST 30-JUN-1998

DEFINITION AF071375 mRNA from cadmium-responsive gene *Caenorhabditis elegans* cDNA clone VLS, mRNA sequence.

ACCESSION AF071375

NID g3265120

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 216)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..216

/organism="Caenorhabditis elegans"

/strain="N2"

/db\_xref="taxon:6239"

/clone="VLS"

/clone\_lib="mRNA from cadmium-responsive gene"

/tissue\_type="whole animal"

/dev\_stage="mixed population"

BASE COUNT 69 a 37 c 66 g 44 t

ORIGIN

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1 tagcaagtgc ggagacaaat gtgaatgcag tggagacaag tttgtgaga agtactgctg
61 tgaggaggcc agtgagaaaa aatgctgtcc agctggatgt aaggagact gcaagtgtgc
121 aaactgtcat tgtcagagc agaagcagtg cgagacaaga cccatcaaca ccagggaact
181 gctgcggctc attaaaatgt ttcagagttg aatcta
```

//

LOCUS AF071374 356 bp mRNA EST 30-JUN-1998

DEFINITION AF071374 mRNA from cadmium-responsive gene *Caenorhabditis elegans* cDNA clone VL9, mRNA sequence.

ACCESSION AF071374

*Fig. 5A-23*

NID g3265119  
KEYWORDS EST.  
SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.  
REFERENCE 1 (bases 1 to 356)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished (1998)  
COMMENT

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FEATURES Location/Qualifiers  
source 1..356  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/clone="VL9"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"

BASE COUNT 126 a 70 c 55 g 105 t

ORIGIN

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1 caatcgatga gtatcctcgt acaattaatg catgatgcaa ttggaaatat tccgaggtag
61 gtaaacggg gaacatcacg agatagatga atacagcgga tatcatatag gcacgcagaa
121 tatcaataaa attttcaaatttcaaaata tcataacgat tataacacgt agcaggggaat
181 tttaaagcca ctgaaataaa tatagaataa tatatacaga cacacacaat ctgatttca
241 gaacatttc agtaacgacg ttgaacttt ttgaagatt tgcgcgagcc ttgatcact
301 ttgcagtca caactccac aactttctt tctcctctt cctctacac gattgc
```

//

LOCUS AF071373 199 bp mRNA EST 30-JUN-1998  
DEFINITION AF071373 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone VL3A, mRNA sequence.

ACCESSION AF071373

NID g3265118

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 199)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

COMMENT

Fig. 5A-24

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 Email: jonf@duke.edu.

FEATURES                      Location/Qualifiers  
 source                      1..199  
                               /organism="Caenorhabditis elegans"  
                               /strain="N2"  
                               /db\_xref="taxon:6239"  
                               /clone="VL3A"  
                               /clone\_lib="mRNA from cadmium-responsive gene"  
                               /tissue\_type="whole animal"  
                               /dev\_stage="mixed population"

BASE COUNT    55 a   31 c   20 g   93 t

ORIGIN

1 taaactctat gtttattgt ttttcaaatttcaaattga aaattgaaac ttcaatttg  
 61 attagagtct ttgtggttg actcctttt ttcatggaac atcttttacg tacgtcatatc  
 121 ttgtgtatc acattacaa atgtgtttt gtaattatat gtaacaaatt tctatgtaca  
 181 cctcatctca tctctctat

//

LOCUS    AF071372   326 bp   mRNA                      EST    30-JUN-1998  
 DEFINITION AF071372 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
                               cDNA clone VL21A, mRNA sequence.

ACCESSION AF071372

NID        g3265117

KEYWORDS EST.

SOURCE    *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
 Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 326)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
 Identification and cloning of new cadmium-responsive genes by  
 differential display

JOURNAL Unpublished (1998)

COMMENT

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 Email: jonf@duke.edu.

FEATURES                      Location/Qualifiers  
 source                      1..326  
                               /organism="Caenorhabditis elegans"  
                               /strain="N2"  
                               /db\_xref="taxon:6239"  
                               /clone="VL21A"  
                               /clone\_lib="mRNA from cadmium-responsive gene"  
                               /tissue\_type="whole animal"  
                               /dev\_stage="mixed population"

BASE COUNT    76 a   61 c   59 g   130 t

# Fig. 5A-25

## ORIGIN

```

1 cgtctccctt tttacttac ttgtagggtgc gtcttgtaa ttgtacgtac ttatatttag
61 caaacctctg gtgttacctc tgccttttg taaaattgt tacacacttt cttttggca
121 gtaaaagtgt ttagcacac ttaacactc tgccactacc aaggtaatag tgagcccatc
181 gaggttttat aaatgtcctt gatagtttaa agtgtggag gatcgagcta ctttgtagt
241 ggaaagccgt gttctgtc ttgtttgt cgatgatta cccaactatt tgatatttg
301 attaccgga ttataata caccac

```

//

LOCUS AF071371 147 bp mRNA EST 30-JUN-1998  
 DEFINITION AF071371 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
 cDNA clone VL20B, mRNA sequence.

ACCESSION AF071371

NID g3265116

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
 Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 147)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
 Identification and cloning of new cadmium-responsive genes by  
 differential display

JOURNAL Unpublished (1998)

## COMMENT

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 Email: jonf@duke.edu.

FEATURES Location/Qualifiers

```

source      1..147
             /organism="Caenorhabditis elegans"
             /strain="N2"
             /db_xref="taxon:6239"
             /clone="VL20B"
             /clone_lib="mRNA from cadmium-responsive gene"
             /tissue_type="whole animal"
             /dev_stage="mixed population"

```

BASE COUNT 54 a 27 c 22 g 44 t

## ORIGIN

```

1 tggcaatata cctagaaaga gtaaatatta tgacgtggca ataatacaga agcagtcgga
61 actacaactc acgaaacatt ttgaaagttt accctctgat ttctttgaa tgtttgtct
121 cacacaataa agaaaattct accgtac

```

//

LOCUS AF071370 285 bp mRNA EST 30-JUN-1998  
 DEFINITION AF071370 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
 cDNA clone VL19, mRNA sequence.

ACCESSION AF071370

NID g3265115

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

*Fig. 5A-26*

ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 285)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished (1998)  
COMMENT  
Contact: Jonathan H. Freedman  
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Email: jonf@duke.edu.

FEATURES Location/Qualifiers  
source 1..285  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/clone="VL19"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"

BASE COUNT 91 a 46 c 52 g 96 t

ORIGIN  
1 cgtggcaata cacagaatat acacattgag atgggtcgaa tggcaaagag aaggtggtgg  
61 ctaatcattc tatatagcac aacgcaaata ataattcga tggcgcgaa ttgtgatgg  
121 tgaatggaat taacaaaatt ttctaacgt cttcattccg agtaatttt cgtttccct  
181 ccactttcg atttatattg ttcttaga aaaagtatt attgcatcgg gtgctcattg  
241 tcttggtga gaataaaac tcgtcactt cccaaaaaaa aaaaa  
//

LOCUS AF071369 216 bp mRNA EST 30-JUN-1998  
DEFINITION AF071369 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone VL13, mRNA sequence.  
ACCESSION AF071369  
NID g3265114  
KEYWORDS EST.  
SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 216)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished (1998)  
COMMENT  
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*Fig. 5A-27*

Email: jonf@duke.edu.

FEATURES                      Location/Qualifiers

source                      1..216  
                              /organism="Caenorhabditis elegans"  
                              /strain="N2"  
                              /db\_xref="taxon:6239"  
                              /clone="VL13"  
                              /clone\_lib="mRNA from cadmium-responsive gene"  
                              /tissue\_type="whole animal"  
                              /dev\_stage="mixed population"

BASE COUNT    69 a   37 c   66 g   44 t

ORIGIN

1 tagcaagtcg gagacaaatg tgaatgcagt ggagacaagt gttgtgagaa gtactgctgt  
61 gaggaggcca gtgagaaaa atgctgtcca gctggatga agggagactg caagtgtgca  
121 aactgtcatt gtgcagagca gaagcagtcg ggagacaaga cccatcaaca ccagggaact  
181 gctgcggctc attaaaatgt ttcagagttg aatcta

//

LOCUS    AF071368    142 bp   mRNA                      EST    30-JUN-1998

DEFINITION   AF071368 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
                              cDNA clone VL11, mRNA sequence.

ACCESSION   AF071368

NID            g3265113

KEYWORDS    EST.

SOURCE      *Caenorhabditis elegans*.

ORGANISM    *Caenorhabditis elegans*

                              Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
                              Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE   1 (bases 1 to 142)

AUTHORS    Freedman, J.H. and Liao, H.-C.

TITLE      Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
                              Identification and cloning of new cadmium-responsive genes by  
                              differential display

JOURNAL    Unpublished (1998)

COMMENT

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                              Duke University  
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                              Email: jonf@duke.edu.

FEATURES                      Location/Qualifiers

source                      1..142  
                              /organism="Caenorhabditis elegans"  
                              /strain="N2"  
                              /db\_xref="taxon:6239"  
                              /clone="VL11"  
                              /clone\_lib="mRNA from cadmium-responsive gene"  
                              /tissue\_type="whole animal"  
                              /dev\_stage="mixed population"

BASE COUNT    45 a   21 c   23 g   53 t

ORIGIN

1 gtgctggagt tgtttgtatt tcagaataaa taaaataaaa tatgatttga gtagaatatt  
61 aaaataaagt ccttcacatt aaattatcaa ttgcttgccc tcgaatatct tccagctggt  
121 gattgcattc gttcattcct tc

*Fig. 5A-28*

//

LOCUS AF071367 84 bp mRNA EST 30-JUN-1998  
DEFINITION AF071367 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone VL10, mRNA sequence.  
ACCESSION AF071367  
NID g3265112  
KEYWORDS EST.  
SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.  
REFERENCE 1 (bases 1 to 84)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished (1998)  
COMMENT  
Contact: Jonathan H. Freedman  
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Duke University  
Box 90328, Durham, NC 27708-0328, USA  
Email: jonf@duke.edu.  
FEATURES Location/Qualifiers  
source 1..84  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/clone="VL10"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"  
BASE COUNT 29 a 10 c 27 g 18 t  
ORIGIN  
1 tagcaagtgc ggagacaaat gtgaatgcag tggagacaag tgttgtgaga agtactgctg  
61 tgaggattcc agtgagaaaa aatc

//

LOCUS AF071366 217 bp mRNA EST 30-JUN-1998  
DEFINITION AF071366 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone VL1, mRNA sequence.  
ACCESSION AF071366  
NID g3265111  
KEYWORDS EST.  
SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.  
REFERENCE 1 (bases 1 to 217)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

*Fig. 5A-29*

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..217  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/clone="VL1"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"

BASE COUNT 69 a 37 c 67 g 44 t

ORIGIN

1 tagcaagtcg ggagacaaat gtgaatgcag tggagacaag tttgtgaga agtactgctg  
61 tggaggaggcc agtgagaaaa aatgctgtcc agctggatgt aaggagact gcaagtgtgc  
121 aaactgtcat tgtgcagagc agaagcagtg cggagacaag acccatcaac accaggaac  
181 tgctgcggct cattaaaatg ttcagagtt gaatcta  
//

LOCUS AF071365 292 bp mRNA EST 30-JUN-1998

DEFINITION AF071365 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT22, mRNA sequence.

ACCESSION AF071365

NID g3265110

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 292)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman  
Nicholas School of the Environment  
Duke University  
Box 90328, Durham, NC 27708-0328, USA  
Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..292  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/clone="DDRT22"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"

*Fig. 5A-30*

/dev\_stage="mixed population"  
BASE COUNT 101 a 60 c 50 g 81 t  
ORIGIN

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1  tggtagtcca caggacaaa tacatttagt ttacaagcc gccacgcgac acgcaacgcc
61  gtaaacttac caaggtacaa caacaacatg tcaagcacag acccatatct tattgtgcg
121  gaacgagatg gcctctactg tagtaatcga caattggact cttatccacc ggatcactta
181  acctatttg atattaatat tcctattggg atcacagggt ttgcccgaaa atgtaattat
241  gaactgaatt gaaatgtatt ataaattagt tttattggg aaaaaaaaaa aa
```

//

LOCUS AF071364 188 bp mRNA EST 30-JUN-1998  
DEFINITION AF071364 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT21D, mRNA sequence.

ACCESSION AF071364

NID g3265109

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 188)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..188  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/clone="DDRT21D"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"

BASE COUNT 44 a 31 c 51 g 62 t  
ORIGIN

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1  tatagggtta gtgacccggt ggataagagt ccaattgtcg attactacag tagaggccat
61  ctgcttcgcg acaaataaga tatgggtctg tgcttgacat gttgtgttg tacctgggt
121  agattacgg cagttgcgtg tcgttggcgg cttgtaaac taaatgtatt ttccgtgtg
181  gagtacca
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//

LOCUS AF071363 289 bp mRNA EST 30-JUN-1998  
DEFINITION AF071363 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT20, mRNA sequence.

ACCESSION AF071363

NID g3265108

*Fig. 5A-31*

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 289)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..289  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/clone="DDRT20"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"

BASE COUNT 63 a 56 c 75 g 95 t

ORIGIN

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1 tttttttt tttgtacat tatggcaaat ggaggcactg tctggttcg tggggtcag
61 gtgcattgga tcatgtata tcctatcctg gcttctaate ccaatgcgtt tacagtcag
121 tgggcttgaa cgggcctagc tgagcttgga caaagttcct tgacagtacg ggctgacaag
181 ctgacagtc agaaattagg cactgtggg ctacaggtgc tcgtaattat ttgagagtt
241 ctgggcttcc ggactttac taggctaate taagacaact gggctctaa
//
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LOCUS AF071362 214 bp mRNA EST 30-JUN-1998

DEFINITION AF071362 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT2, mRNA sequence.

ACCESSION AF071362

NID g3265107

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 214)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

*Fig. 5A-32*

FEATURES                      Location/Qualifiers

source                      1..214  
                              /organism="Caenorhabditis elegans"  
                              /strain="N2"  
                              /db\_xref="taxon:6239"  
                              /clone="DDRT2"  
                              /clone\_lib="mRNA from cadmium-responsive gene"  
                              /tissue\_type="whole animal"  
                              /dev\_stage="mixed population"

BASE COUNT    77 a   37 c   40 g   60 t

ORIGIN

1 aaatcatggc ggcggatgca acagtcttct caattggcaa ctgtctatat cattccgcaa  
61 cacatttcgg atgtctcga aaaggacttc ccaaagttat tggagtactg tgaaagagtt  
121 cgtcatgaag ttcccaaag gactttacta tgtgaattaa attgcaaac tagtagtcag  
181 atcaataaaa tttacgtgg aaaaaaaaaa aaaa

//

LOCUS    AF071361   322 bp   mRNA            EST    30-JUN-1998

DEFINITION   AF071361 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
                              cDNA clone DDRT19, mRNA sequence.

ACCESSION   AF071361

NID            g3265106

KEYWORDS    EST.

SOURCE      *Caenorhabditis elegans*.

ORGANISM    *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE   1 (bases 1 to 322)

AUTHORS    Freedman, J.H. and Liao, H.-C.

TITLE      Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
                              Identification and cloning of new cadmium-responsive genes by  
                              differential display

JOURNAL    Unpublished (1998)

COMMENT

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FEATURES                      Location/Qualifiers

source                      1..322  
                              /organism="Caenorhabditis elegans"  
                              /strain="N2"  
                              /db\_xref="taxon:6239"  
                              /clone="DDRT19"  
                              /clone\_lib="mRNA from cadmium-responsive gene"  
                              /tissue\_type="whole animal"  
                              /dev\_stage="mixed population"

BASE COUNT    102 a   77 c   70 g   73 t

ORIGIN

1 taggtgaccg tagagaagcc cagatatatta aaatctaaag ggaaactgtt tgaccagaag

*Fig. 5A-33*

61 attagagccc agttgtctta gatagcctag taaaagtcg gaagcccaga actctcaaaa  
121 taattacgag cacctgtagc ccacaagtgc ctaattctg actgtcaagc ttgtcgaccc  
181 gtactgtcaa ggaactttgt caagctcagc taggcccgtt caagcccaca tgactgtaaa  
241 cgattcgagg ttagaagcca ggataggata tccatgatcc aatgcacat gacccacgga  
301 accagatgtg ctcatcat ag

//

LOCUS AF071360 228 bp mRNA EST 30-JUN-1998  
DEFINITION AF071360 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT18, mRNA sequence.

ACCESSION AF071360

NID g3265105

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 228)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman  
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Box 90328, Durham, NC 27708-0328, USA  
Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..228

/organism="Caenorhabditis elegans"

/strain="N2"

/db\_xref="taxon:6239"

/clone="DDRT18"

/clone\_lib="mRNA from cadmium-responsive gene"

/tissue\_type="whole animal"

/dev\_stage="mixed population"

BASE COUNT 70 a 49 c 20 g 89 t

ORIGIN

1 tttttttt ttccccatt catcacacac tatcatgtt tatattcaga cctattacct  
61 gtccagaaaa actgagctga aaaaatcccg gacgagcagc tcttcacat tcaaatctt  
121 ccatcatc cccactcaat tcattgttt tgccttgat ttcaaat ttgccttat  
181 tattttattg cttaaattaag aaaactgtta cttgcaaaa aaaaaaaa

//

LOCUS AF071359 255 bp mRNA EST 30-JUN-1998

DEFINITION AF071359 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT1, mRNA sequence.

ACCESSION AF071359

NID g3265104

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

*Fig. 5A-34*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.

REFERENCE 1 (bases 1 to 255)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished (1998)  
COMMENT  
Contact: Jonathan H. Freedman  
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Box 90328, Durham, NC 27708-0328, USA  
Email: jonf@duke.edu.

FEATURES Location/Qualifiers  
source 1..255  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/clone="DDRT1"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"

BASE COUNT 113 a 25 c 51 g 66 t

ORIGIN  
1 atcattcaag aaagctatta tcagaaaaca taaatgacat agatcaagtg taaatcacat  
61 atatataaag tggataaata tatatagtta aacggataag gaaattaatt aatgaatttt  
121 gaaactggca gcgaaggatg aacagggaaa ggcacatgtt aaaataaatg aatgtgtata  
181 attcgtgaa gagttagtta tgtaggtga tggcagccat gcagaatgag ccattgttcc  
241 gaaaaaaaaa aaaaa  
//

LOCUS AF071358 433 bp mRNA EST 30-JUN-1998  
DEFINITION AF071358 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT17, mRNA sequence.  
ACCESSION AF071358  
NID g3265103  
KEYWORDS EST.  
SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 433)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished (1998)  
COMMENT  
Contact: Jonathan H. Freedman  
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Box 90328, Durham, NC 27708-0328, USA  
Email: jonf@duke.edu.

*Fig. 5A-35*

FEATURES                      Location/Qualifiers

source                      1..433

                              /organism="Caenorhabditis elegans"

                              /strain="N2"

                              /db\_xref="taxon:6239"

                              /clone="DDRT17"

                              /clone\_lib="mRNA from cadmium-responsive gene"

                              /tissue\_type="whole animal"

                              /dev\_stage="mixed population"

BASE COUNT                149 a    63 c    83 g    138 t

ORIGIN

1 tggactaag ggccaataac tgagcttttg cacggcggca tcaatgataa agagaaacta

61 ttttgacgg ttaaataac caaatttaca cggcgagtc aatcaaaaat tctcatctgg

121 aacagcaaag tacatcggag aattgctgga aggaagcact gatgaaacta aattaactgc

181 tggatgata ggaaaaacgt caagattgac gtggagtgg agagaaggac tatgtttgga

241 tggttactaa gattttgtaa ctggtgacaa taaggacatc acttttctaa ctaacttaaa

301 tctttttta cttctttct tctgaattaa ttgtgttta aggcgaattc tatgtttcag

361 aattttatta cgtttgctt tcatgttta attgtaaaag taagcaattt ttccaccgta

421 aaaaaaaaa aaa

//

LOCUS    AF071357    933 bp    mRNA            EST    30-JUN-1998

DEFINITION AF071357 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
                               cDNA clone DDRT16FC, mRNA sequence.

ACCESSION AF071357

NID            g3265102

KEYWORDS    EST.

SOURCE      *Caenorhabditis elegans*.

ORGANISM    *Caenorhabditis elegans*  
                               Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
                               Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE    1 (bases 1 to 933)

AUTHORS      Freedman, J.H. and Liao, H.-C.

TITLE        Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
                               Identification and cloning of new cadmium-responsive genes by  
                               differential display

JOURNAL      Unpublished (1998)

COMMENT

                              Contact: Jonathan H. Freedman  
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                               Duke University  
                               Box 90328, Durham, NC 27708-0328, USA  
                               Email: jonf@duke.edu.

FEATURES                      Location/Qualifiers

source                      1..933

                              /organism="Caenorhabditis elegans"

                              /strain="N2"

                              /db\_xref="taxon:6239"

                              /clone="DDRT16FC"

                              /clone\_lib="mRNA from cadmium-responsive gene"

                              /tissue\_type="whole animal"

                              /dev\_stage="mixed population"

BASE COUNT                275 a    190 c    171 g    297 t

ORIGIN

Fig. 5A-36

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1 catgcatctt tttttttt ttttttta ctgtctcaag tatgttggat tcatgtttga
61 ttattactgc tgcgctgttt ggagccgctg tcatttactt gaaaaatttc ttcactgttc
121 ctagcattaa accaaaacct gatattcaca aaaaagacta caaaaaggat gtagtctatc
181 tgtatcagat gaagagactc aagaactgtc cgaactgtc ccccttctgc atgaaaatcg
241 agattctttg tagaatcttc aagattcctt acgagattat cacatgcacc tctgaacgct
301 ctcggaatgg attggtccct ttcgttgaac tcaatggaga gcacattgct gattctgac
361 ttatcgaaat gcgcttgaga tcacatttta aaattccgtc gcttccaact gagctggaaa
421 ctcaatctgt tgccttaagc aagttgcag atcaccattt gttcttcgta cttatacgat
481 ttaaaattgc tgtcgacgaa ttctacaaaa ccattatcga aataatcggt ctcccaacct
541 tctgaattt ccttctcatg ccccttttga aggctataat cgggaaaaat gtctacaaca
601 aatgtcaggg agccattgga gattttgaat tgagttagct cgacgagatt cttcacagag
661 atttgcgaat cgtagagAAC accttgGCCa agaaaaagt tctttcggg gaggaatca
721 cggcggcgga tgcaacagtc ttcttcaat tggcaactgt ctattatcca ttccgcaatc
781 acattcgga tgttcgaa aaggacttcc caaagtatt ggagtactgt gaaagagttc
841 gtcatgaagt ttacccaaag gactttacta tgtgaattaa attgtcaaac tagtagtcag
901 atcaataaaa ttctacgtgg caaaaaaaaa aaa
  
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//

LOCUS AF071356 238 bp mRNA EST 30-JUN-1998  
 DEFINITION AF071356 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
 cDNA clone DDRT16, mRNA sequence.

ACCESSION AF071356

NID g3265101

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
 Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 238)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
 Identification and cloning of new cadmium-responsive genes by  
 differential display

JOURNAL Unpublished (1998)

COMMENT

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 Email: jonf@duke.edu.

FEATURES Location/Qualifiers

```

source      1..238
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             /strain="N2"
             /db_xref="taxon:6239"
             /clone="DDRT16"
             /clone_lib="mRNA from cadmium-responsive gene"
             /tissue_type="whole animal"
             /dev_stage="mixed population"
  
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BASE COUNT 77 a 42 c 45 g 74 t

ORIGIN

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1 tttttttt ttgggagga aatcacggcg gcggatgcaa cagtctctc tcaattggca
61 actgtctatt atccattccg caatcacatt tcggatgttc tcgaaaagga ctcccaaag
121 ttattggagt actgtgaaag agttcgtcat gaagtttacc caaaggactt tactatgtga
  
```

*Fig. 5A-37*

181 attaaattgt caaactagta gtcagatcaa taaaattcta cgtggcaaaa aaaaaaaa  
//

LOCUS AF071355 248 bp mRNA EST 30-JUN-1998  
DEFINITION AF071355 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT15, mRNA sequence.  
ACCESSION AF071355  
NID g3265100  
KEYWORDS EST.  
SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.  
REFERENCE 1 (bases 1 to 248)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished (1998)  
COMMENT  
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Duke University  
Box 90328, Durham, NC 27708-0328, USA  
Email: jonf@duke.edu.

FEATURES Location/Qualifiers  
source 1..248  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/clone="DDRT15"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"

BASE COUNT 67 a 46 c 31 g 104 t  
ORIGIN

1 tttttttt ttctgcatgt tgtaatacta atatttatta attttcttta attttctttg  
61 taagtttgt atttataggt tgttgagatt ttttgcctg taattttgca actgtgattc  
121 atgtatgtac tatatgaacc gaaaccccct cccgtcatat acaacagtta gtaaaacatt  
181 ttaatccat atttctcatt cccaacactc ttacagggtt tgcattcagca gcagcagtg  
241 aaacacaa  
//

LOCUS AF071354 226 bp mRNA EST 30-JUN-1998  
DEFINITION AF071354 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT12, mRNA sequence.  
ACCESSION AF071354  
NID g3265099  
KEYWORDS EST.  
SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.  
REFERENCE 1 (bases 1 to 226)

Fig. 5A-38

AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished (1998)  
COMMENT  
Contact: Jonathan H. Freedman  
Nicholas School of the Environment  
Duke University  
Box 90328, Durham, NC 27708-0328, USA  
Email: jonf@duke.edu.  
FEATURES Location/Qualifiers  
source 1..226  
/organism="Caenorhabditis elegans"  
/strain="N2"  
/db\_xref="taxon:6239"  
/clone="DDRT12"  
/clone\_lib="mRNA from cadmium-responsive gene"  
/tissue\_type="whole animal"  
/dev\_stage="mixed population"  
BASE COUNT 68 a 38 c 35 g 85 t  
ORIGIN  
1 tttttttt ttttgaaca aagaactgag cactctatgg ttatcaagt ctatatgat  
61 ccgtgatgcc tactgtatcg tacatccatc tcgatcgtaa tgcattattg atcatgagtt  
121 cccaaaggtc ttaatcttga caaagggtgca atagatatat atccttatt ggccactatat  
181 atatgttcag aattatgact gatcgatata tatgatcaaa gttaca  
//  
LOCUS AF071353 212 bp mRNA EST 30-JUN-1998  
DEFINITION AF071353 mRNA from cadmium-responsive gene *Caenorhabditis elegans*  
cDNA clone DDRT10, mRNA sequence.  
ACCESSION AF071353  
NID g3265098  
KEYWORDS EST.  
SOURCE *Caenorhabditis elegans*.  
ORGANISM *Caenorhabditis elegans*  
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;  
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.  
REFERENCE 1 (bases 1 to 212)  
AUTHORS Freedman, J.H. and Liao, H.-C.  
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.  
Identification and cloning of new cadmium-responsive genes by  
differential display  
JOURNAL Unpublished (1998)  
COMMENT  
Contact: Jonathan H. Freedman  
Nicholas School of the Environment  
Duke University  
Box 90328, Durham, NC 27708-0328, USA  
Email: jonf@duke.edu.  
FEATURES Location/Qualifiers  
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/strain="N2"

*Fig. 5A-39*

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  121 gtacattttt tggagctatc ttttatgtt gcgcctttct ttgtctctt tgaatgagtt  
  181 ttgaaatgaa ttgtctgtgc aaaaaaaaaa aa  
//
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